

What is claimed is:

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1. A plasma-processing method comprising the steps of:
mounting an object to be processed on a mounting unit disposed within
a process chamber;
5 generating a plasma by feeding a plasma-generating gas containing
sulfur hexafluoride and helium into the process chamber and by causing a
plasma discharge; and
etching the object with the plasma.

10 2. The plasma-processing method of claim 1, wherein the step of
generating the plasma includes the sub-steps of:
applying a high-frequency voltage to the mounting unit; and
supplying the plasma-generating gas from an ejection hole opposite to
the mounting unit.

15 3. The plasma-processing method of claim 1,
wherein the object is a wafer having first and second sides, and the
second side including a damaged-layer damaged by mechanical polishing or
grinding, and

20 wherein the step of etching the object includes the sub-step of removing
the damaged-layer.

25 4. The plasma-processing method of claim 3,
wherein the wafer includes a protective sheet affixed to the first side
thereof, and

wherein the step of etching the object further includes the sub-step of
etching the wafer with the protective sheet mounted to the mounting unit.

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5. The plasma-processing method of claim 4, wherein the step of etching the wafer further includes the sub-step of etching the wafer while cooling the mounting unit.

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